OIPE IAP28
FEB 21 2006
PATENT & TRADEMARK OFFICE

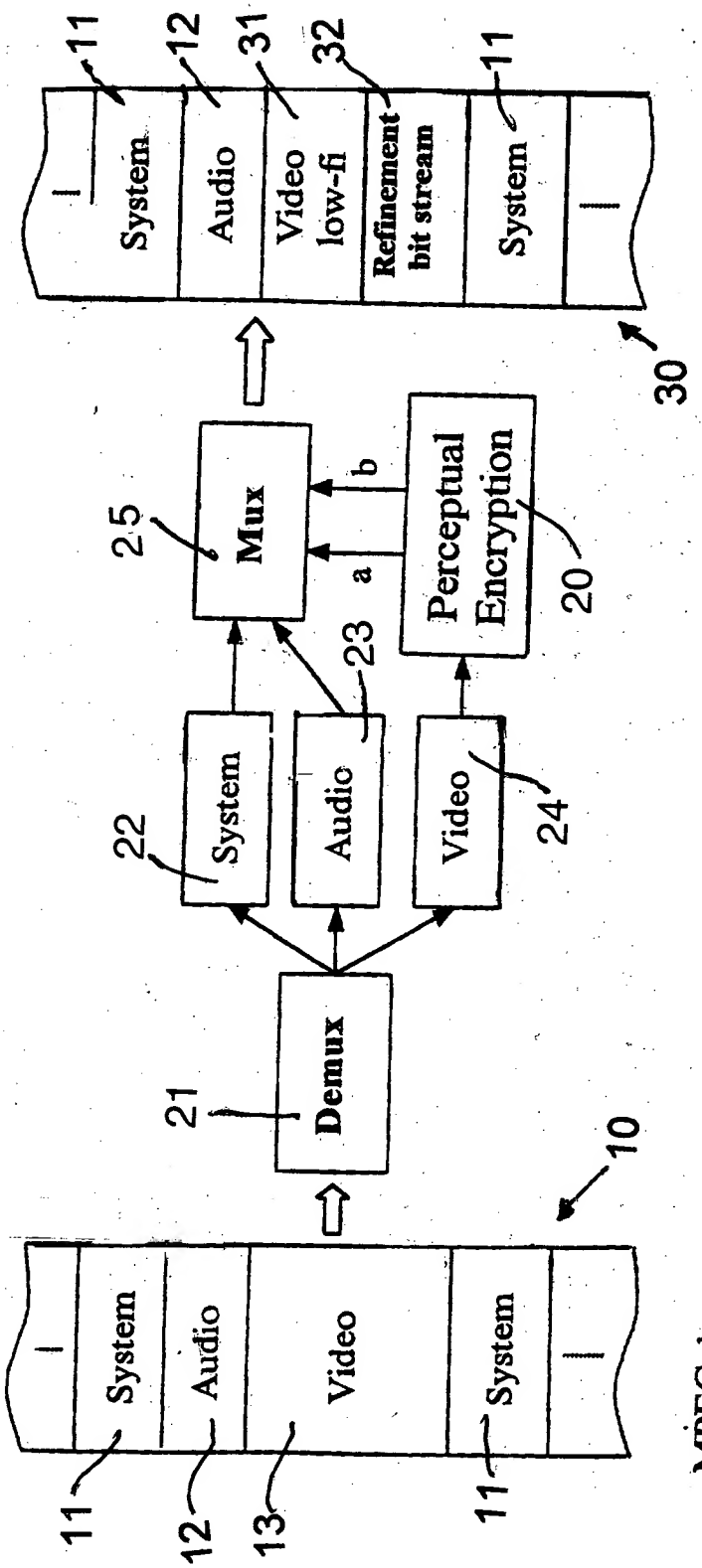


Fig. 1.

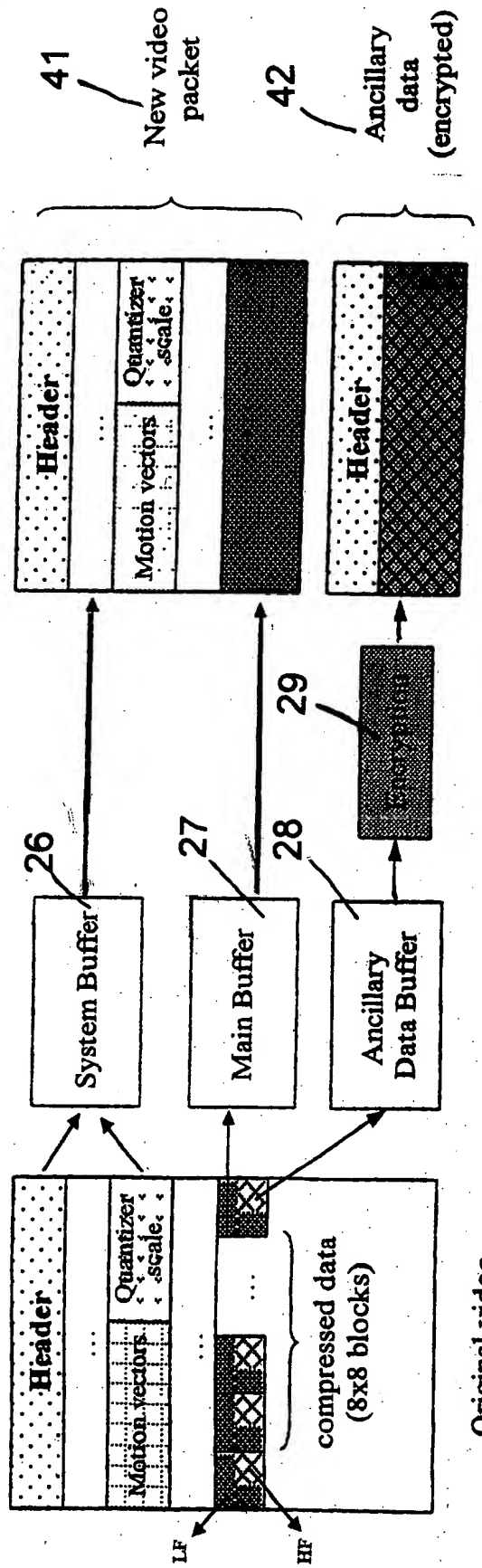

41
New video packet
42
Ancillary data (encrypted)
Header
Motion vectors
Quantizer scale
Header
26
27
28
29
System Buffer
Main Buffer
Ancillary Data Buffer
Header
Motion vectors
Quantizer scale
compressed data (8x8 blocks)
LF
HF
Original video packet 13

Fig. 2.

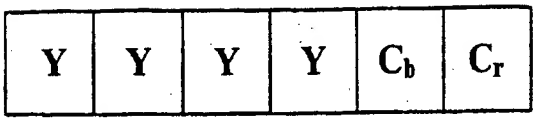
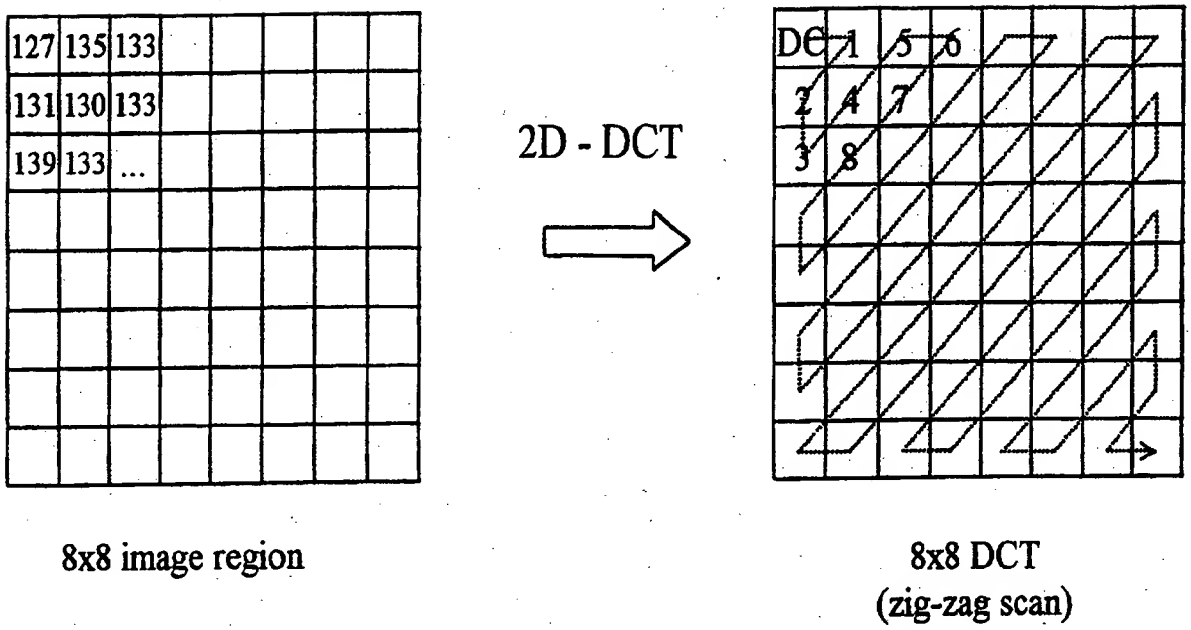

Y
Y
Y
Y
C_b
C_r

Fig. 3.


127 135 133
131 130 133
139 133 ...
2D - DCT
DC 1 5 6
2 4 7
3 8
8x8 image region
8x8 DCT
(zig-zag scan)

DC
1
2
...
...
63
EOB

Fig. 4.

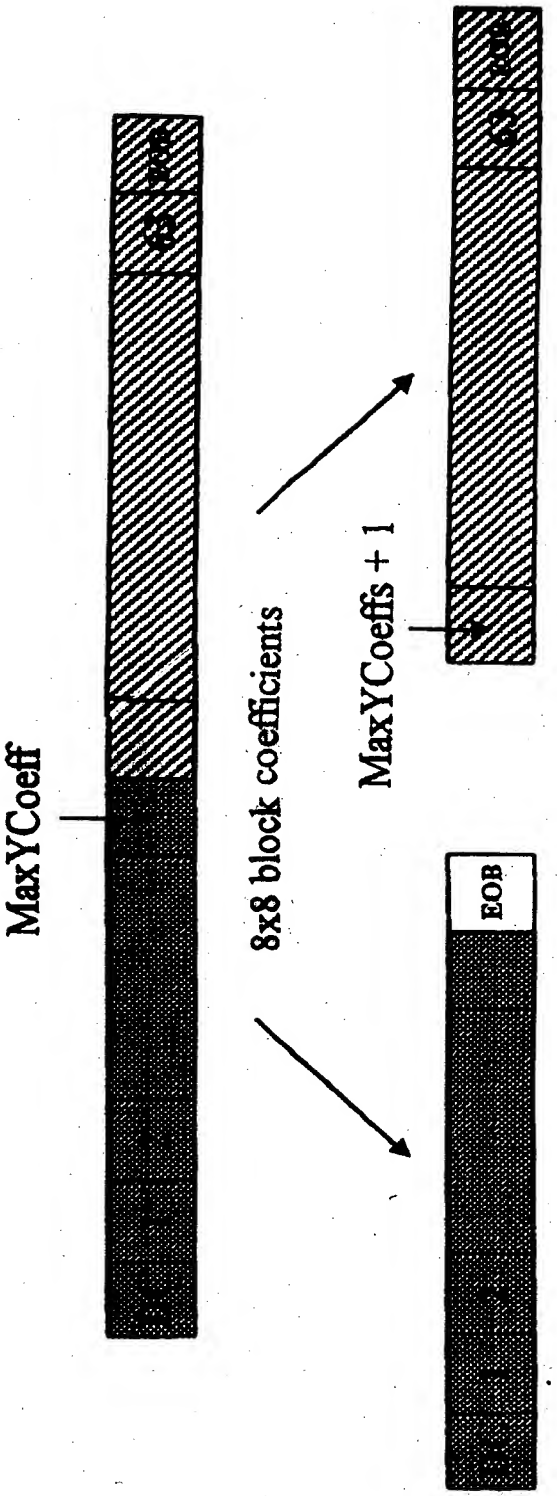

MaxYCoeff
8x8 block coefficients
MaxYCoeffs + 1
EOB
Low-resolution data
Ancillary data

Fig. 5.

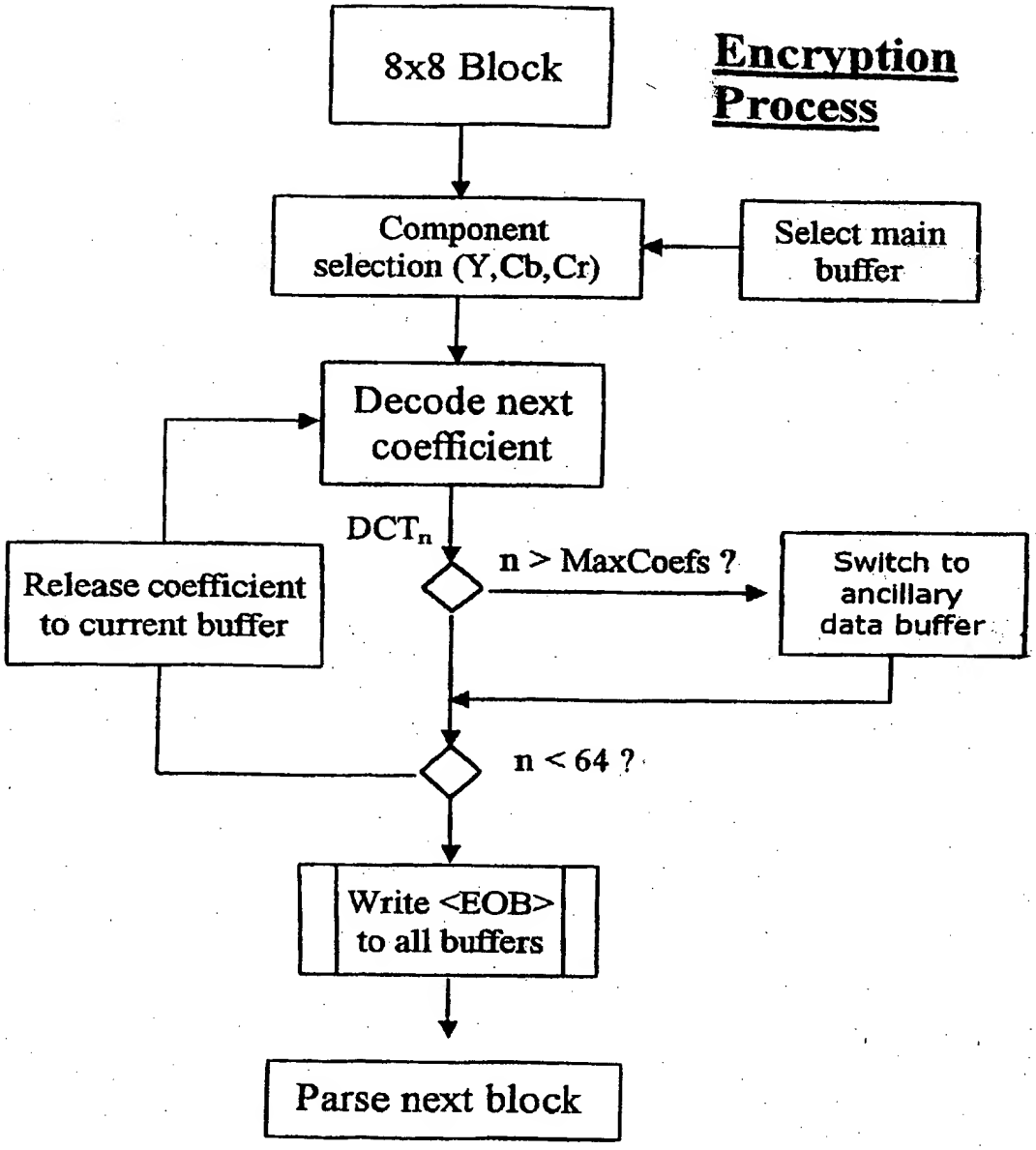

8x8 Block
Encryption Process
Component selection (Y,Cb,Cr)
Select main buffer
Decode next coefficient
DCTn
n > MaxCoefs ?
Release coefficient to current buffer
Switch to ancillary data buffer
n < 64 ?
Write <EOB> to all buffers
Parse next block

Fig. 6 .

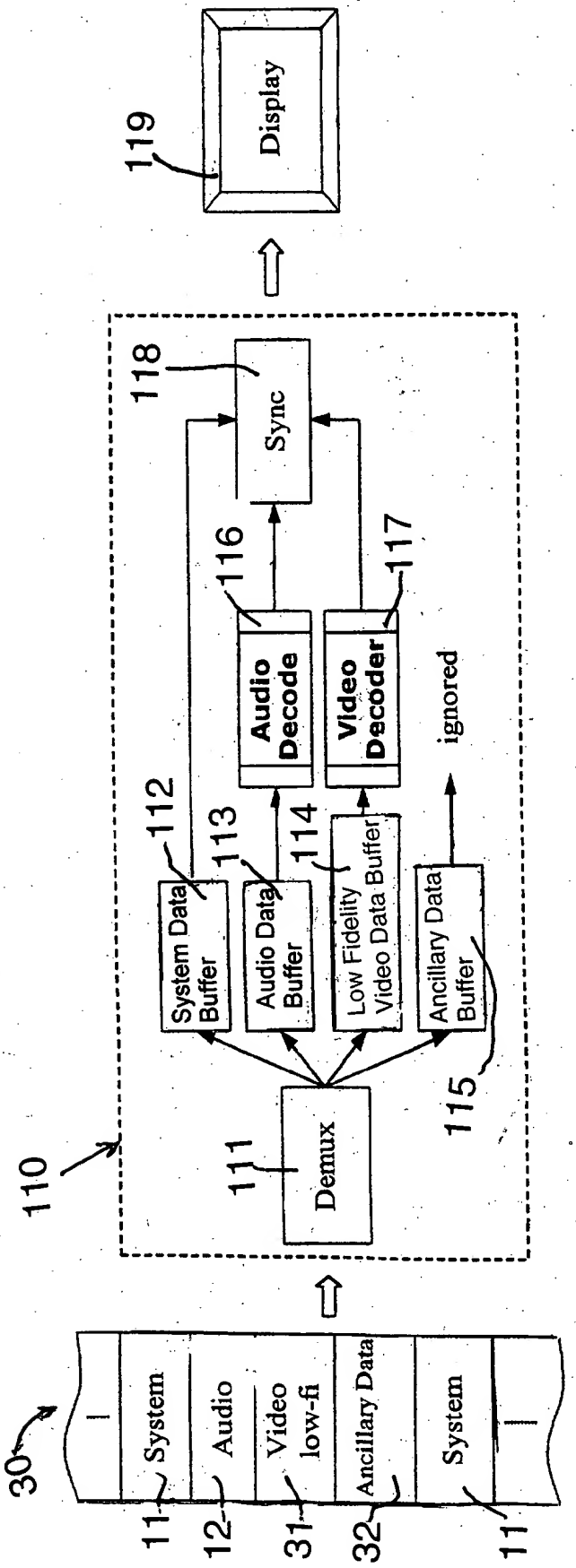

Standard MPEG-1 player
Perceptually encrypted MPEG-1 stream
30
System
Audio
Video low-fi
Ancillary Data
System
11
12
31
32
11
110
Demux
111
System Data Buffer
112
Audio Data Buffer
113
Low Fidelity Video Data Buffer
114
Ancillary Data Buffer
115
ignored
Audio Decode
116
Video Decoder
117
Sync
118
Display
119

Fig. 7

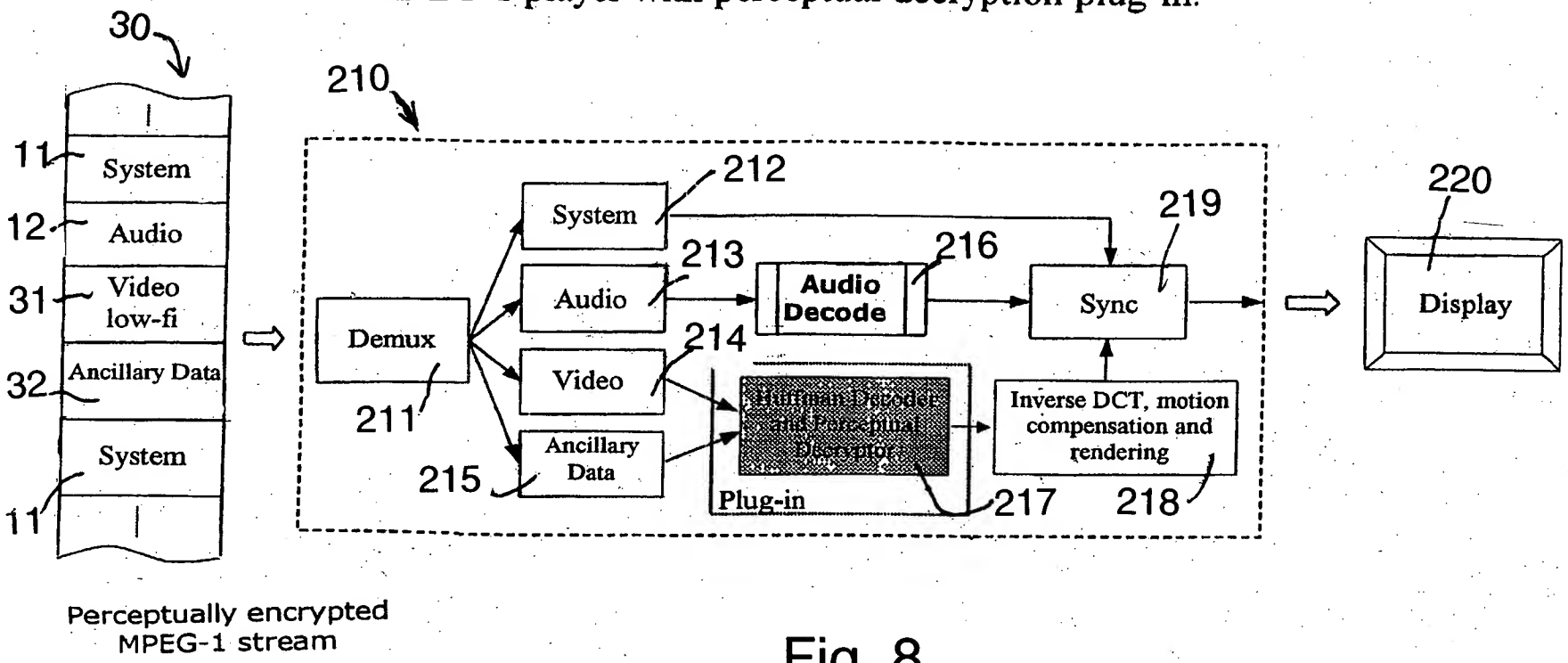


Fig. 8

Replacement Sheet

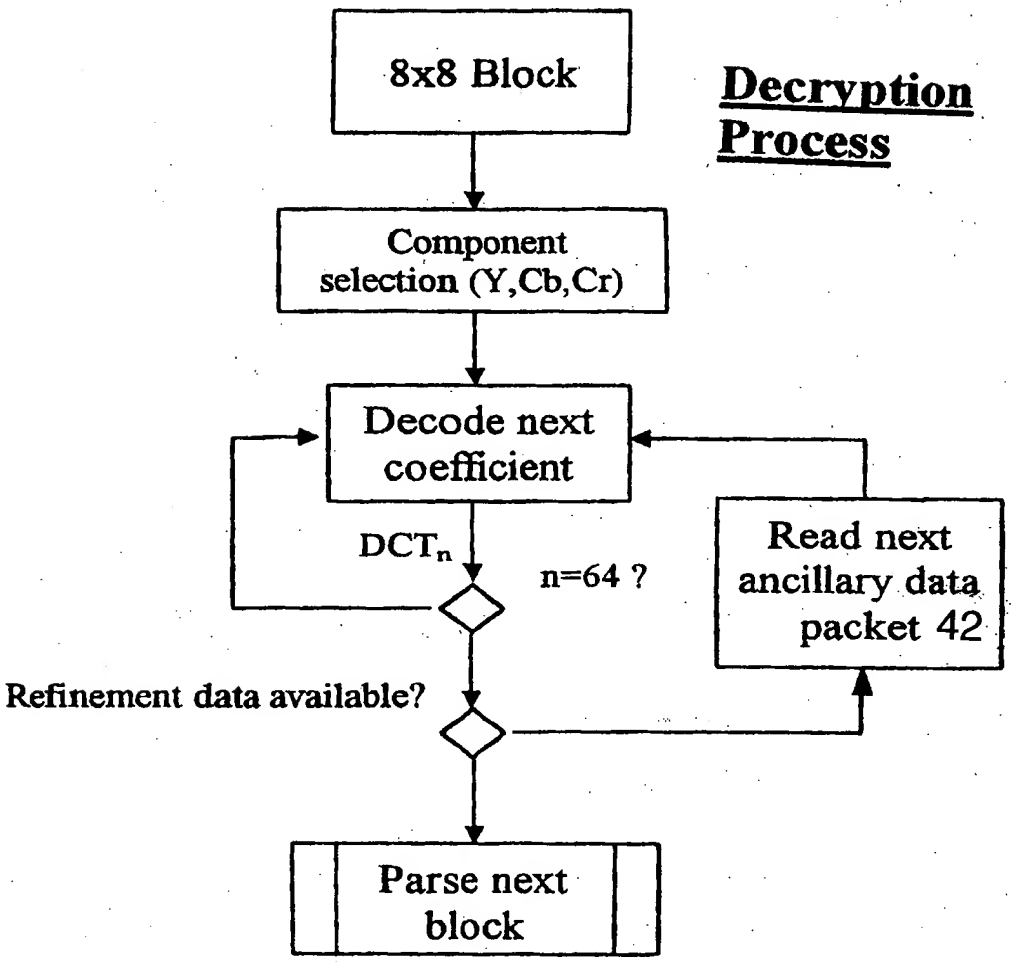

8x8 Block
Decryption Process
Component selection (Y,Cb,Cr)
Decode next coefficient
DCTn
n=64 ?
Read next ancillary data packet 42
Refinement data available?
Parse next block

Fig. 9.